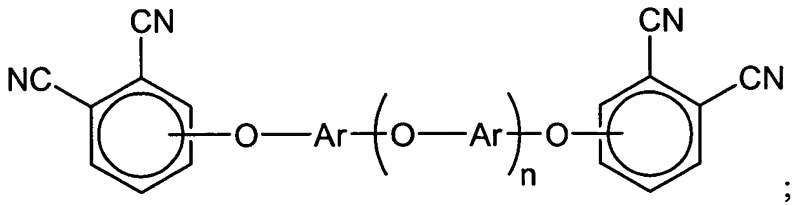
AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application.

1-13. (cancelled)

14. (currently amended) A thermoset formed by curing a mixture comprising a phthalonitrile monomer comprising the formula:



;

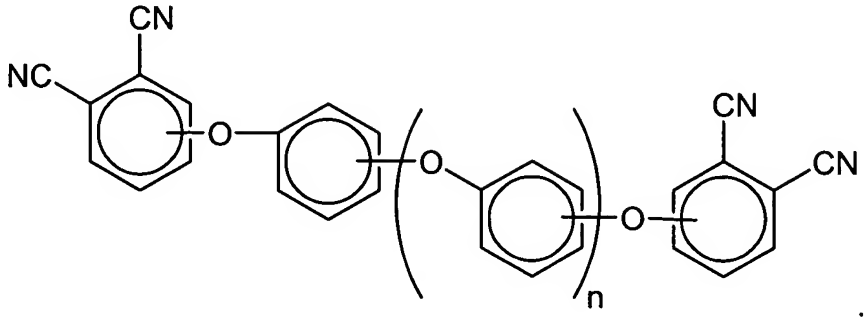
wherein Ar is an independently selected divalent aromatic radical with or without substituents containing one or more fused aromatic rings, one or more non-fused aromatic rings without intervening functional groups, or combinations thereof wherein the radical sites are on the same or different aromatic rings; and

wherein n is an even integer greater than or equal to 2.

15. (original) The thermoset of claim 14, wherein n is less than or equal to about 100.

16. (original) The thermoset of claim 14, wherein n is selected from the group consisting of 2, 4, 6, and 8.

17. (original) The thermoset of claim 14, wherein the phthalonitrile monomer comprises the formula:



18. (original) The thermoset of claim 14, wherein the mixture comprises more than one phthalonitrile monomer.

19. (original) The thermoset of claim 18, wherein the more than one phthalonitrile monomers comprise more than one value for n.

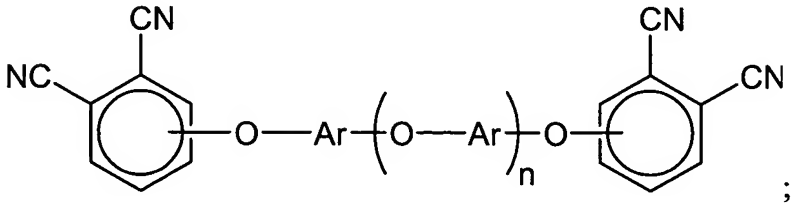
20. (original) The thermoset of claim 14, wherein the mixture further comprises a compound selected from the group consisting of 4,4'-bis(3,4-dicyanophenoxy)biphenyl, bis[4-(3,4-dicyanophenoxy)phenyl]dimethylmethane, bis[4-(2,3-dicyanophenoxy)phenyl]dimethylmethane, bis[4-(3,4-dicyanophenoxy)phenyl]-bis(trifluoromethyl)methane, bis[4-(2,3-dicyanophenoxy)phenyl]-bis(trifluoromethyl)methane, 1,3-bis(3,4-dicyanophenoxy)benzene, and 1,4-bis(3,4-dicyanophenoxy)benzene.

21. (original) The thermoset of claim 14, wherein the mixture further comprises a compound with one or more phthalonitrile groups.

22-37. (cancelled)

38. (currently amended) A process of preparing a thermoset comprising the step of

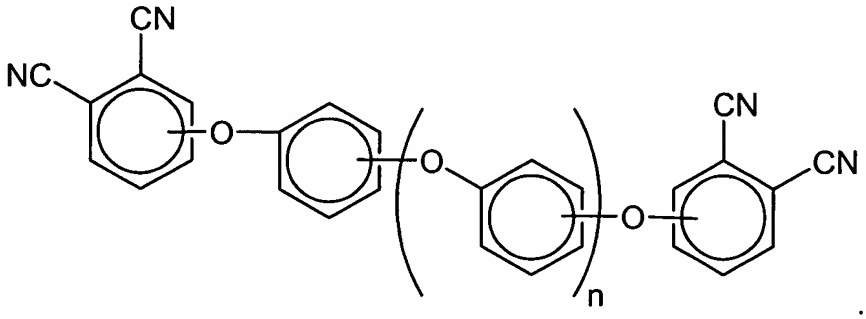
curing a mixture comprising a phthalonitrile monomer comprising the formula,



wherein Ar is an independently selected divalent aromatic radical with or without substituents containing one or more fused aromatic rings, one or more non-fused aromatic rings without intervening functional groups, or combinations thereof wherein the radical sites are on the same or different aromatic rings; and

wherein n is an even integer greater than or equal to 2.

39. (original) The process of claim 38, wherein the phthalonitrile monomer comprises the formula:



40. (original) The process of claim 38, wherein the mixture comprises more than one phthalonitrile monomer.

41. (original) The process of claim 39, wherein the more than one phthalonitrile monomers comprise more than one value for n.

42. (original) The process of claim 38, wherein the mixture further comprises a compound selected from the group consisting of 4,4'-bis(3,4-dicyanophenoxy)biphenyl, bis[4-(3,4-dicyanophenoxy)phenyl]dimethylmethane, bis[4-(2,3-dicyanophenoxy)phenyl]dimethylmethane, bis[4-(3,4-dicyanophenoxy)phenyl]-bis(trifluoromethyl)methane, bis[4-(2,3-dicyanophenoxy)phenyl]-bis(trifluoromethyl)methane, 1,3-bis(3,4-dicyanophenoxy)benzene, and 1,4-bis(3,4-dicyanophenoxy)benzene.

43. (original) The process of claim 38, wherein the mixture further comprises a compound with one or more phthalonitrile groups.

44. (original) The process of claim 38, wherein the mixture further comprises a curing agent.

45. (original) The process of claim 44, wherein the curing agent comprises a composition selected from the group consisting of aromatic amines, primary amines, secondary amines, diamines, polyamines, amine-substituted phosphazenes, phenols, strong acids, organic acids, strong organic acids, inorganic acids, metals, metallic salts, metallic salt hydrates, metallic compounds, halogen-containing aromatic amines, clays, and chemically modified clays.

46. (original) The process of claim 44, wherein the curing agent is selected from the group consisting of bis[4-(4-aminophenoxy)phenyl]sulfone, 1,4-bis(3-aminophenoxy)benzene, 1,12-diaminododecanediphenylamine, epoxy amine hardener, 1,6-hexanediamine, 1,3-phenylenediamine, p-toluenesulfonic acid, cuprous iodide, cuprous bromide, stannous chloride, stannous chloride hydrates, stannous chloride dihydrate, aluminum nitrate hydrates, aluminum nitrate nonahydrate, montmorillonite, and chemically modified montmorillonite.

47. (original) A process of preparing a thermoset comprising the steps of:

reacting a dihydroxyaromatic with a dihaloaromatic;

wherein the reaction is performed in the presence of a copper compound and ~~cesium carbonate~~ a base; and

wherein the dihydroxyaromatic is present in an excess amount;

reacting a 3- or 4-nitrophthalonitrile with the product of the previous step; and

curing a mixture comprising the product of the previous step.

48. (original) The process of claim 47:

wherein the dihydroxyaromatic is selected from the group consisting of resorcinol, hydroquinone, and combinations thereof; and

wherein the dihaloaromatic is a selected from the group consisting of m-dibromobenzene, p-dibromobenzene, m-diiodobenzene, p-diiodobenzene, m-bromoiodobenzene, p-bromoiodobenzene, and combinations thereof; and

49. (original) The process of claim 47, wherein the copper compound is selected from the group consisting of CuI and CuBr.

50. (original) The process of claim 47, wherein the mixture comprises more than one phthalonitrile monomer.

51. (original) The process of claim 47, wherein the mixture further comprises a compound selected from the group consisting of 4,4'-bis(3,4-dicyanophenoxy)biphenyl, bis[4-(3,4-dicyanophenoxy)phenyl]dimethylmethane, bis[4-(2,3-dicyanophenoxy)phenyl]dimethylmethane, bis[4-(3,4-dicyanophenoxy)phenyl]-bis(trifluoromethyl)methane, bis[4-(2,3-dicyanophenoxy)phenyl]-bis(trifluoromethyl)methane, 1,3-bis(3,4-dicyanophenoxy)benzene, and 1,4-bis(3,4-dicyanophenoxy)benzene.

52. (original) The process of claim 47, wherein the mixture further comprises a compound with one or more phthalonitrile groups.

53. (original) The process of claim 47, wherein the mixture further comprises a curing agent.

54. (original) The process of claim 53, wherein the curing agent is selected from the group consisting of aromatic amines, primary amines, secondary amines, diamines, polyamines, amine-substituted phosphazenes, phenols, strong acids, organic acids, strong organic acids, inorganic acids, metals, metallic salts, metallic salt hydrates, metallic compounds, halogen-containing aromatic amines, clays, and chemically modified clays.

55. (original) The process of claim 53, wherein the curing agent is selected from the group consisting of bis[4-(4-aminophenoxy)phenyl]sulfone, 1,4-bis(3-aminophenoxy)benzene, 1,12-diaminododecanediphenylamine, epoxy amine hardener, 1,6-hexanediamine, 1,3-phenylenediamine, p-toluenesulfonic acid, cuprous iodide, cuprous bromide, stannous chloride, stannous chloride hydrates, stannous chloride dihydrate, aluminum nitrate hydrates, aluminum nitrate nonahydrate, montmorillonite, and chemically modified montmorillonite.

56. (new) The process of claim 47, wherein the base is selected from the group consisting of cesium carbonate and potassium carbonate.